

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. (Canceled)
2. (Currently amended) The isolated polynucleotide molecule of claim 33, wherein said pigment protein~~PPCT~~ has a maximal absorbance of ~~said~~ incident light in at~~the~~ range of 550-580 nm, ~~and a maximal fluorescence emission in the range of 400-630 nm.~~
3. (Currently amended) ~~The~~An isolated polynucleotide molecule of claim 33, ~~comprising a nucleotide sequence encoding a pigment protein from coral tissue (PPCT),~~ wherein said pigment protein~~polynucleotide molecule~~ comprises a nucleotide sequence encoding a protein having the as its N-terminal amino acid sequence~~[[:]]~~ SVIAK (SEQ ID NO:1).
4. (Currently amended) ~~The~~An isolated polynucleotide molecule of claim 33~~comprising a nucleotide sequence encoding a pigment protein from coral tissue (PPCT),~~ wherein said pigment protein~~polynucleotide molecule~~ comprises a nucleotide sequence encoding a protein having the as its N-terminal amino acid sequence~~[[:]]~~ SVIAKQMTYKVYMSGTV (SEQ ID NO:2).

5. (Currently amended) The isolated polynucleotide molecule of claim ~~331~~, 2, 3 or 4, wherein said ~~pigment protein~~~~PPCT~~ comprises a chromatophore region comprising the amino acid sequence: QYG.

6. (Currently amended) The isolated polynucleotide molecule of claim ~~335~~, wherein said polynucleotide molecule ~~encodes~~~~comprises a nucleotide sequence encoding~~ a protein having ~~the~~an amino acid sequence ~~set forth in~~~~corresponding to the sequence shown as~~ SEQ ID NO:3 or ~~SEQ ID NO:4~~.

7. (Currently amended) The isolated polynucleotide molecule of claim ~~335~~, wherein said polynucleotide molecule comprises a nucleotide sequence which has at least 80% identity ~~with to the sequence shown as~~ SEQ ID NO:5 or 6.

8. (Currently amended) The isolated polynucleotide molecule of claim 7, wherein said polynucleotide molecule comprises a nucleotide sequence which has at least 90% identity ~~with to the sequence shown as~~ SEQ ID NO:5 or 6.

9. (Currently amended) The isolated polynucleotide molecule of claim 7, wherein said polynucleotide molecule comprises a nucleotide sequence which has at least 95% identity ~~with to the sequence shown as~~ SEQ ID NO:5 or 6.

10. (Currently amended) The isolated polynucleotide molecule of claim 7, wherein said polynucleotide molecule comprises thea nucleotide sequence set forth in ~~substantially corresponding to the sequence shown as~~ SEQ ID NO:5 or 6.

11.-16. (Canceled)

17. (Currently amended) A vector comprising thea polynucleotide molecule of claim ~~33~~, 2, 3 or 4.

18. (Original) A host cell transfected or transformed with the vector of claim 17.

19.-32 (Canceled)

33. (New) An isolated polynucleotide molecule comprising a nucleotide sequence selected from the group consisting of:

SEQ ID NO:5, SEQ ID NO:6, a nucleotide sequence having at least 80% identity with SEQ ID NO:5, a nucleotide sequence having at least 80% identity with SEQ ID No:6, a nucleotide sequence capable of hybridizing under high stringency conditions to the complementary strand of SEQ ID NO:5, and a nucleotide sequence capable of hybridizing under high stringency conditions to the complementary strand of SEQ ID NO:6, wherein said polynucleotide molecule encodes a pigment protein.

34. (New) The isolated polynucleotide molecule of claim 33, wherein said pigment protein has a maximal absorbance of incident light in a range of 320-600 nm.

35. (New) The isolated polynucleotide molecule of claim 33 or 34, wherein said pigment protein has a maximal fluorescence emission in a range of 300-700 nm.

36. (New) The isolated polynucleotide molecule of claim 33, 34 or 2, wherein said pigment protein has a maximal fluorescence emission in a range of 400-630 nm.

37. (New) The isolated polynucleotide molecule of claim 33, wherein said pigment protein is found in coral tissue from a coral family selected from the group consisting of: Pocilloporidae, Acroporidae, Poritidae, Faviidae, Merulinidae and Fungiidae.

38. (New) The isolated polynucleotide of claim 37, wherein said coral tissue is selected from the group consisting of: *Acropora aspera*, *Acropora digitifera*, *Acropora horrida*, *Acropora formosa*, *Montipora monasteriata*, *Montipora caliculata*, *Pocillopora damicornis*, *Porites murrayensis*, *Porites lobata*, *Plesiastrea versipora* and *Seriatopora hystrix*.

39. (New) The isolated polynucleotide of claim 38, wherein said coral tissue is from: *Acropora aspera*, *Acropora horrida*, *Montipora monasteriata*, *Montipora caliculata*, *Porites murrayensis*, *Porites lobata* and *Plesiastrea versipora*.

40. (New) The host cell of claim 18, wherein the host cell is a plant cell.

41. (New) A process for producing a pigment protein, wherein the process comprises the step of cultivating a host cell transfected or transformed with the vector of claim 18 under conditions suitable for expression of the pigment protein, and recovering the pigment protein from the host cell.